

Amendments to the Claims:

This listing will replace all prior versions, and listings, of claims in the application.

Listing of the Claims.

1. (currently amended) An electrode for a secondary electrochemical cell comprising a substrate and a layer of nanostructured framework material which adheres to the substrate, the framework material being in the form of a nanofilm and being [of] a silicon-germanium alloy of formula $Si_{(1-z)}Ge_z$ or a alkali metal alloy of said silicon-germanium alloy, wherein z is from 0.25 to 0.75 and only one layer of framework material is present in the electrode.
2. (currently amended) The electrode of claim 1, wherein the alkali metal alloy is a lithium alloy The electrode of claim 1 wherein the framework material is alloyed with an alkali metal.
3. (canceled)
4. (currently amended) The electrode of claim [3] 67, wherein the nanoparticles [has] have a diameter of not greater than about 300 nm.
5. (currently amended) The electrode of claim 4, wherein the nanoparticles [has] have a diameter of not greater than about 100 nm.
6. (currently amended) The electrode of claim 5, wherein the nanoparticles [has] have a diameter of not greater than about 50 nm .
7. (currently amended) The electrode of claim 1, wherein the nanostructured material is a nanofilm wherein the nanofilm of framework material is amorphous.

8. (currently amended)The electrode of claim [7] 1, wherein the nanofilm has a thickness of not greater than about 500 nm.
9. (original)The electrode of claim 8, wherein the nanofilm has a thickness of not greater than about 200 nm.
10. (original)The electrode of claim 9, wherein the nanofilm has a thickness of not greater than about 100 nm.
11. (currently amended)The electrode of claim 2, wherein the alkali metal is lithium and the lithium alloy of the nanostructured material has the formula $\text{Li}_x\text{Si}_{(1-z)}\text{Ge}_z$, wherein x is at least about 1.
12. (original)The electrode of claim 11, wherein the lithium alloy of the nanostructured material has the formula $\text{Li}_x\text{Si}_{(1-z)}\text{Ge}_z$, wherein x is at least about 2.5.
13. (original)The electrode of claim 1, wherein the nanostructured material has a cycle life that is stable over at least about 10 cycles.
14. (original)The electrode of claim 13, wherein the nanostructured material has a cycle life that is stable over at least about 20 cycles.
15. (original)The electrode of claim 1, wherein the nanostructured material exhibits a rate capability of at least about 1C.
16. (canceled)
17. (canceled)

18. (currently amended) The electrode of claim [17]1, wherein the substrate is a current collector and is made from a metal.

19. (withdrawn) A secondary electrochemical cell comprising an anode, a cathode, and an electrolyte, wherein the anode comprises nanostructured material of formula $\text{Si}_{(1-z)}\text{Ge}_z$ or a lithium alloy thereof, wherein $0 < z \leq 1$.

20. (withdrawn) The secondary electrochemical cell of claim 19, wherein the secondary electrochemical cell is an electrochemical supercapacitor.

21. (withdrawn) The secondary electrochemical cell of claim 19, wherein the secondary electrochemical cell is fabricated on an integrated device.

22-29 (canceled)

30.-40 (canceled)

41. (currently amended) An electrode for a secondary electrochemical cell comprising a nanofilm of nanostructured material of formula $\text{Si}_{(1-z)}\text{Ge}_z$ wherein $0 < z \leq 1$, the nanofilm being a continuous amorphous film which is not in the form of an aggregate of nanoparticles.

42. (currently amended) An electrode for a secondary electrochemical cell comprising an alkali metal alloy of nanostructured material of formula $\text{Si}_{(1-z)}\text{Ge}_z$ wherein $0 < z \leq 1$ and the alkali metal alloy is produced by electrochemically alloying an alkali metal with a nanofilm of the nanostructured material, the nanofilm not being in the form of an aggregate of nanoparticles and being continuous and amorphous prior to electrochemical alloying with the alkali metal.

43. (canceled).

44. (canceled)
45. (canceled)
46. (currently amended) An electrode for a secondary electrochemical cell comprising nanostructured material and a conductive diluent, wherein the nanostructured material comprises [a] germanium or germanium alkali metal alloy nanoparticles and the conductive diluent is a metal or conductive carbonaceous material.
47. (previously presented) The electrode of claim 46, further comprising a current collector.
48. (previously presented) The electrode of claim 46, wherein the electrode comprises alternating layers of germanium nanoparticles and conductive diluent.
49. (previously presented) The electrode of claim 46, wherein the conductive diluent is capable of binding or alloying with an alkali metal.
50. (previously presented) The electrode of claim 49, wherein the alkali metal is lithium.
51. (currently amended) The electrode of claim 1, ~~wherein z is greater than 0.5~~ wherein z is from 0.5 to 0.75.
52. (previously presented) The electrode of claim 41, wherein the nanofilm adheres to a substrate which serves as a current collector.

53. (previously presented) The electrode of claim 41, wherein the electrode comprises alternating layers of a nanofilm of nanostructured material of formula $\text{Si}_{(1-z)}\text{Ge}_z$ and a metal film.
54. (previously presented) The electrode of claim 41, where the thickness of the nanofilm is no greater than 500 nm.
55. (canceled)
56. (previously presented) The electrode of claim 41, wherein the nanofilm is a Ge-Si alloy.
57. (previously presented) The electrode of claim 42, wherein the nanofilm adheres to a substrate which serves as a current collector.
58. (previously presented) The electrode of claim 42 wherein the electrode comprises alternating layers of an alkali metal alloy of nanostructured material of formula $\text{Si}_{(1-z)}\text{Ge}_z$ and a metal film.
59. (previously presented) The electrode of claim 42 wherein the alkali metal is lithium.
60. (previously presented) The electrode of claim 42, where the thickness of the nanofilm is no greater than 500 nm.
61. (canceled)
62. (previously presented) The electrode of claim 42, wherein the nanofilm is a Ge-Si alloy.

63. (new) The electrode of claim 1, wherein the framework material nanofilm is not in the form of an aggregate of nanoparticles.
64. (new) The electrode of claim 1, wherein the electrode is the anode of a secondary electrochemical cell comprising an anode, a cathode and an electrolyte containing a lithium salt, the framework material of the electrode being disposed to allow interaction with the electrolyte.
65. (new) The electrode of claim 41, wherein the electrode is the anode of a secondary electrochemical cell comprising an anode, a cathode and an electrolyte containing a lithium salt, the nanofilm of the electrode being disposed to allow interaction with the electrolyte.
66. (new) The electrode of claim 42, wherein the electrode is the anode of a secondary electrochemical cell comprising an anode, a cathode and an electrolyte containing a lithium salt, the alkali metal alloy of the electrode nanofilm being disposed to allow interaction with the electrolyte.
67. (new) An electrode for a secondary electrochemical cell comprising a substrate and a nanostructured framework material, wherein the framework material is in the form of nanoparticles and is a silicon-germanium alloy of formula $\text{Si}_{(1-z)}\text{Ge}_z$, wherein z is greater than 0.5.
68. (new) The electrode of claim 67 wherein the framework material is electrochemically alloyed with an alkali metal.
69. (new) The electrode of claim 68 wherein the alkali metal is lithium.
70. (new) The electrode of claim 67 wherein the electrode further comprises a conductive diluent and the conductive diluent is a metal or conductive carbonaceous material.

71. (new) The electrode of claim 67, wherein the conductive diluent is capable of binding or alloying with an alkali metal.
72. (new) The electrode of claim 68, wherein the alkali metal is lithium.